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04/14/00
1c490 U.S. PTO

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Leonard J DiSanza et al.

Docket No. SIG99004

Title: COMPUTER PERIPHERAL DEVICE INCORPORATING INFRARED TRANSMISSIONS

1c490 U.S. PTO
09/549651
04/14/00

Date: 4/12/2000

To the Honorable Commissioner
of Patents and Trademarks
Box Patent Application
Washington, D.C. 20231

REQUEST FOR FILING A NATIONAL PATENT APPLICATION

The applicants respectfully request that the above captioned patent application be accepted for examination. This patent application is a:

- ☒ new patent application
- ☐ continuation in part (CIP) of Application Serial No. [] filed on []
- ☐ divisional application of Application Serial No. [] filed on []
- ☐ continuation application of Application Serial No. [] filed on []

Accompanying this request is (as indicated by an "X" in the corresponding box):

- ☒ 1. 8 pages of specification, which includes the claims and abstract, and 2 sheets of formal drawings;
- ☒ 2. Combined Declaration and Power of Attorney;
- ☐ 3. An Information Disclosure Statement along with the references;
- ☐ 4. A petition to extend the response for a priority application identified above;
- ☒ 5. An assignment assigning all rights in the above referenced patent application to SigmaTel, Inc.;
- ☒ 6. An assignment recording cover sheet;
- ☒ 7. A verified statement establishing small entity status under 37 C.F.R. Sections 1.9 and 1.27;
- ☒ 8. A certificate of mailing indicating that the above captioned patent application has been deposited as "Express Mail" with the United States Postal Service;
- ☐ 9. A certificate of mailing indicating that the above captioned patent application has been deposited with the United States Postal Service with sufficient postage as first class mail;
- ☒ 10. A return postcard; and
- ☐ 11. A preliminary amendment.

The filing fee for the above captioned patent application is as follows:

Large entity status apply?

			basic filing fee	345.00	
total claims	<input type="text" value="10"/>	extra per claim fee	9.00	extra claim fee	0.00
total ind claims	<input type="text" value="2"/>	extra per ind claim fee	39.00	extra ind claim fee	0.00
			assign record fee	40.00	
			TOTAL FILING FEE	385.00	

Payment of the above calculated filing fee is as follows (as indicated by the "X" in the corresponding box):

☒ A check in the amount of \$ 385.00

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A duplicate sheet is attached.

Respectfully submitted,

By: 

Timothy W. Markison
Registration No: 33,534
Phone: (512) 343-6636 x32
Fax: (512) 343-6199

SigmaTel, Inc.,
6101 West Courtyard Drive
Building 1
Austin, Texas 78730

SIG99004

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Leonard J DiSanza et al. Examiner:
Serial No. Art Group:
Filing Date: Docket No. SIG99004
Title: COMPUTER PERIPHERAL DEVICE INCORPORATING INFRARED TRANSMISSIONS

4/11/2000

To the Honorable Commissioner
of Patents and Trademarks
Washington, D.C. 20231

CERTIFICATE OF EXPRESS MAILING

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I hereby certify that this paper and the items identified below are being deposited with the U.S. Postal Service "Express Mail Post Office to Addresses" service under 37 C.F.R. Section 1.10 on the 'Date of Deposit', indicated above, and is addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.

Items accompanying this Certificate of Express Mailing:

- ☒ 1. A new patent application including 8 pages of specification, and 2 sheets of formal drawings;
☒ 2. Combined Declaration and Power of Attorney;
☐ 3. An Information Disclosure Statement along with the references;
☐ 4. A petition to extend the response for a priority application identified above;
☒ 5. An assignment assigning all rights in the above referenced patent application to SigmaTel, Inc.;
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Leonard J DiSanza et al. Examiner:
Serial No. Art Group:
Filing Date: Docket No. SIG99004
Title: COMPUTER PERIPHERAL DEVICE INCORPORATING INFRARED TRANSMISSIONS

4/11/2000

To the Honorable Commissioner
of Patents and Trademarks
Washington, D.C. 20231


STATEMENT OF STATUS AS SMALL ENTITY
Pursuant to 37 C.F.R. Section 1.27 and Section 1.9

For the above captioned patent application, a party in interest avers that it qualifies for small entity status as SMALL BUSINESS CONCERN. To verify the small entity status, the party in interest attests that:

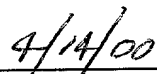
1. This verified statement for the above captioned patent application or patent is being submitted prior to or with the first fee paid as a small entity;
2. For purposes of this verified statement, as defined in 37 C.F.R. Section 1.27, a license to a Federal agency resulting from a funding agreement with that agency pursuant to 35 U.S.C. 202 (c) (4) does not constitute a license.
3. As a SMALL BUSINESS CONCERN:
 - (a) I swear that I am an official of SigmaTel, Inc., empowered to act on behalf of SigmaTel, Inc.,
 - (b) In my capacity as identified in this section 3(a), I swear that SigmaTel, Inc. qualifies as a small business concern as defined in 37 C.F.R Section 1.9 and that the number of employees of SigmaTel, Inc. and those of its affiliates, does not exceed 500 persons;
 - (c) I further swear that my signature appears at the end of this Statement of Status as Small Entity;
 - (d) I still further swear that, in support my of contention that SigmaTel, Inc. qualifies as a small business concern, exclusive rights to the invention of the above captioned patent application have been conveyed to and remain with SigmaTel, Inc.,

Signatures of Person(s) Making the Verified Statement

SigmaTel, Inc.
Name: Timothy W. Markison



Signature
Title: General Counsel



Date

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**COMPUTER PERIPHERAL DEVICE
INCORPORATING INFRARED TRANSMISSIONS**

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Technical Field of the Invention

This invention relates generally to data transmissions and more particularly to data transmissions via a computer peripheral device.

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Background of the Invention

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Computers are known to include a central processing unit, system memory, video graphics processing circuitry, audio processing circuitry, and peripheral ports. The peripheral ports allow the central processing unit to communicate with computer peripheral devices such as a computer mouse, keyboard, printer, monitor, scanner, etc. Such peripheral ports include serial ports, parallel ports and more recently the Universal Serial Bus (USB) port.

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The USB port provides a data transmission path that can carry up to 12 megabits per second of data. By utilizing a USB hub, multiple devices may be coupled to a single USB port of a computer. As such, a computer mouse, keyboard, etc., may be coupled to a USB hub and then coupled through a single cable to the USB port of the computer. Alternatively, the USB port may be coupled to a USB/infrared dongle that provides infrared transmissions with peripheral devices. Such a USB/IR dongle is disclosed in co-

30 pending patent applications entitled "Method and Apparatus for Providing USB to IR Data Transmissions, having a filing date of February 8, 1999 and a serial number of 09/246613, "Method and Apparatus for Transporting Data Utilizing Multiple Data

Transports” having a filing date of February 8, 1999 and a serial number of 09/246655, and a patent application entitled “Method and Apparatus for Recovering Data That Was Transported Utilizing Multiple Data Transport Protocols” having a filing date of February 8, 1999 and a serial number of 09/246653.

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With the ever increasing trend of reducing the computer’s desk space requirements, integration of peripheral devices is a benefit. Therefore, a need exists for a computer peripheral device that further includes infrared transmission capabilities.

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Brief Description of the Drawing

Figure 1 illustrates a computer operably coupled to a device that is in accordance with the present invention;

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Figure 2 illustrates an alternate embodiment of a peripheral device in accordance with the present invention;

Figure 3 illustrates a schematic block diagram of another peripheral device in accordance with the present invention; and

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Figure 4 illustrates a schematic block diagram of yet another peripheral device in accordance with the present invention.

Detailed Description of a Preferred Embodiment

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Generally, the present invention provides a computer peripheral device that includes circuitry which performs a computer peripheral function, a USB cable, and a USB\IR transceiver. The circuitry may be implemented to perform a mouse function, a keyboard function, a portable printer function, a microphone function, a hand scanner function, and/or a video camera function. The USB cable is operably coupled to provide connectivity with a computer to the circuitry and/or the USB/IR transceiver. As such, a

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USB/IR transceiver module may be integrated into an existing computer peripheral device thereby adding the functionality of the USB/IR transmissions without the addition of a separate USB/IR dongle.

5 The present invention can be more fully described with reference to Figures 1 through 4. Figure 1 illustrates a schematic block diagram of a computer 10 operably coupled to a peripheral device 12 via a USB cable 28. The computer 10 includes a motherboard 14, system memory 16 and at least one USB port 18. The motherboard 14 includes a central processing unit 20 and a USB processor 22. Computer 10 may be a
10 standard personal computer, laptop, work station, or any other commercially available computer equipped with a USB/IR driver 24 and the peripheral driver software 26. The drivers 24 and 26 are shown in system memory 16 but may be stored anywhere within the computer. Functionality of the USB/IR software driver 24 is described in greater detail with reference to the above-mentioned co-pending patent applications.

15 The peripheral device 12 includes a USB/IR module 34, peripheral device circuitry 32, and a USB connector 30. The USB/IR module 34 includes an IR transceiver section 38 and a USB to IR conversion section 36. The USB/IR module 34 is discussed in greater detail in the above-mentioned co-pending applications. The peripheral device
20 12 is operably coupled to allow the USB/IR module 34 and/or the peripheral device circuitry 32 to be coupled via the USB connector 30 to the computer 10. Note that the peripheral device circuitry 32 may be implemented to function as a mouse, keyboard, portable printer, microphone, hand scanner, video camera, etc. Such functionality is known, thus no further discussion will be presented except to further illustrate the
25 teachings of the present invention.

 As one of average skill in the art would appreciate, the peripheral device 12 may be coupled to the computer 10 via a cable other than an USB cable. For example, the peripheral device 12 may be coupled via the mouse port, keyboard port, printer port,
30 serial port, etc. of the computer. Regardless of the cable coupling the peripheral device 12 to the computer 10, the peripheral device includes the USB/IR module 34 and the

peripheral circuitry 32. Either of these devices 32 or 34 may be coupled to the computer via the cable.

Figure 2 illustrates a schematic block diagram of an alternate embodiment of the peripheral device 12. In this embodiment, the peripheral device 12 includes a switch 42 that, based on a selection input 44, selects either the USB/IR module 34 or the peripheral device circuitry 32 to be coupled to the USB connector. The switching circuitry may be a simple mechanical switch mounted on the housing, for example, of a mouse, that, when depressed, causes the USB/IR module 34 to be coupled to the USB connector 30. When in another position, the switch 42 causes the peripheral device 32 to be coupled to the USB connector 30.

Figure 3 illustrates another embodiment of the peripheral device 12. In this embodiment, the peripheral device 12 includes a USB hub 46 and at least one USB port 48. In this embodiment, the peripheral device 12, such as a mouse, functions as a USB hub. The USB hub 46 allows either the USB/IR module 34, the peripheral device circuitry 32, and/or the USB port 48 to be coupled to the USB connector 30.

Figure 4 illustrates yet another embodiment of the peripheral device 12. In this embodiment, two USB cables are connected to two USB connectors. One of the USB connectors is directly coupled to the USB/IR module 34 while the other is directly connected to the peripheral device circuitry 32. In this embodiment, both the USB/IR module 34 and the peripheral device 32 may be simultaneously active.

The preceding discussion has presented a computer peripheral device that includes IR transceiving capabilities. By utilizing the existing housing of peripheral devices to incorporate a USB/IR transceiver module, a computer may be extended the functionality of USB/IR transmissions without additional hardware coupled thereto. As one of average skill in the art will appreciate, other embodiments may be derived from the teachings of the present invention without deviating from the scope of the claims or the spirit of the invention.

Claims

What is claimed is:

- 5 1. A computer peripheral device comprising:

circuitry to perform a computer peripheral function;

Universal Serial Bus (USB) cable that provides a connection to a computer; and

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USB/IR (infrared) transceiver operably coupled to the USB cable, wherein at least one of the circuitry and the USB/IR transceiver is actively coupled to the computer via the USB cable.

- 15 2. The computer peripheral device of claim 1, wherein the circuitry further comprises being implemented to perform at least one of: a mouse function, a keyboard function, a portable printer function, a microphone function, hand scanner function, and a video camera function.

- 20 3. The computer peripheral device of claim 1 further comprises switching circuitry that is operable to switch between the circuitry and the USB/IR transceiver based on a selection input, wherein the switching circuitry actively couples either the circuitry or the USB/IR transceiver to the computer.

- 25 4. The computer peripheral device of claim 1 further comprises a USB hub operably coupled to the circuitry, the USB cable, and the USB/IR transceiver, wherein the USB hub enables both the circuitry and the USB/IR transceiver to be actively coupled to the computer.

- 30 5. The computer peripheral device of claim 4 further comprises at least one USB port operably coupled to the USB hub.

circuitry to perform a computer peripheral function;

infrared transceiver operably coupled to the cable, wherein at least one of the circuitry and the infrared transceiver is actively coupled to the computer via the cable.

9. The computer peripheral device of claim 7 further comprises switching circuitry that is operable to switch between the circuitry and the infrared transceiver based on a selection input, wherein the switching circuitry actively couples either the circuitry or the infrared transceiver to the computer.

20 10. The computer peripheral device of claim 7, wherein the cable further comprises a pair of cables, wherein one of the pair of cables is coupled to the circuitry and another of the pair of cables is coupled to the infrared transceiver.

COMPUTER PERIPHERAL DEVICE INCORPORATING INFRARED TRANSMISSIONS

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Abstract of the Disclosure

A computer peripheral device includes circuitry that performs a computer peripheral function, a USB cable, and a USB\IR transceiver. The circuitry may be implemented to perform a mouse function, a keyboard function, a portable printer
10 function, a microphone function, a hand scanner function, and/or a video camera function. The USB cable is operably coupled to provide connectivity with a computer to the circuitry and/or the USB/IR transceiver.

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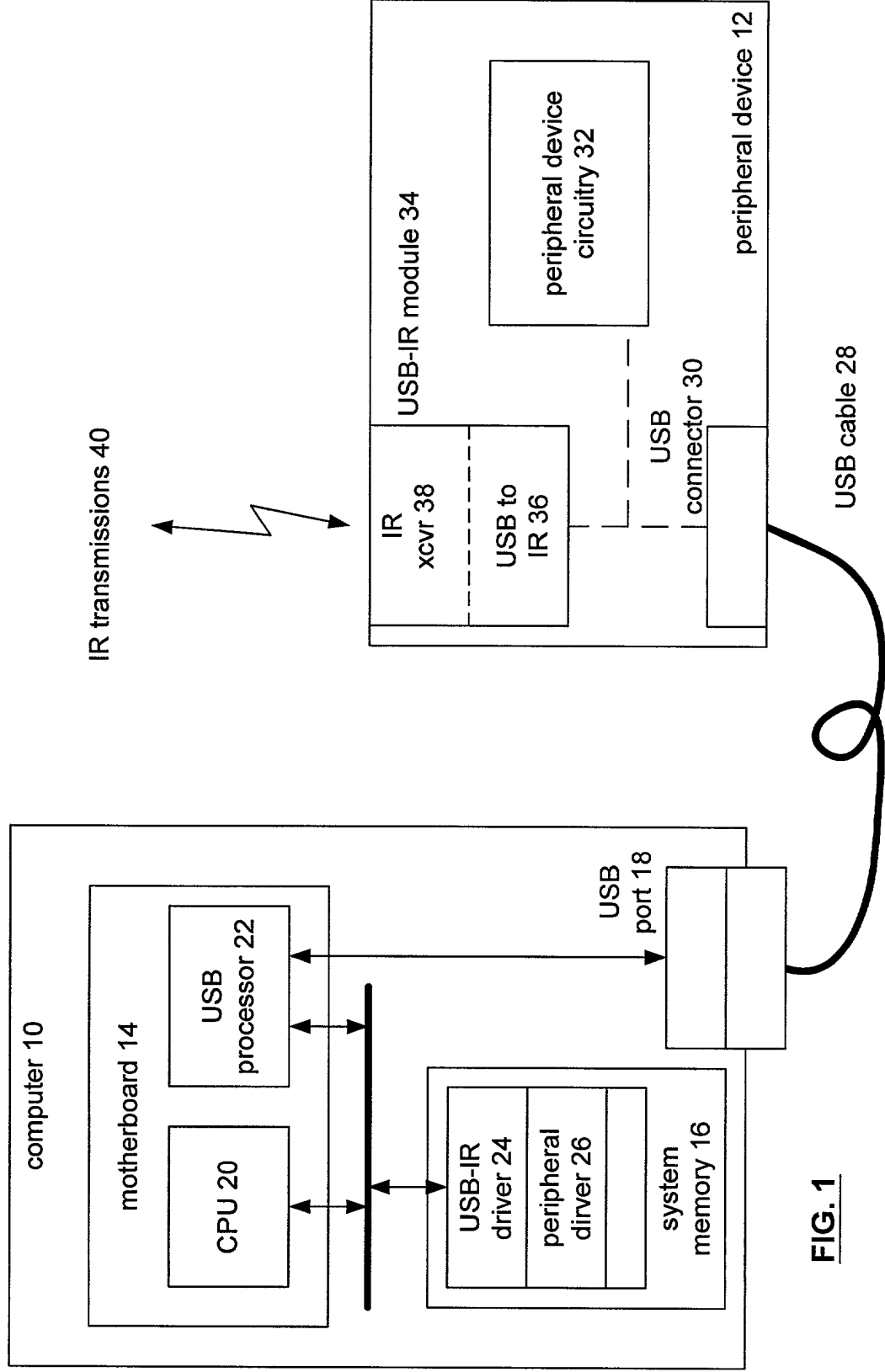


FIG. 1

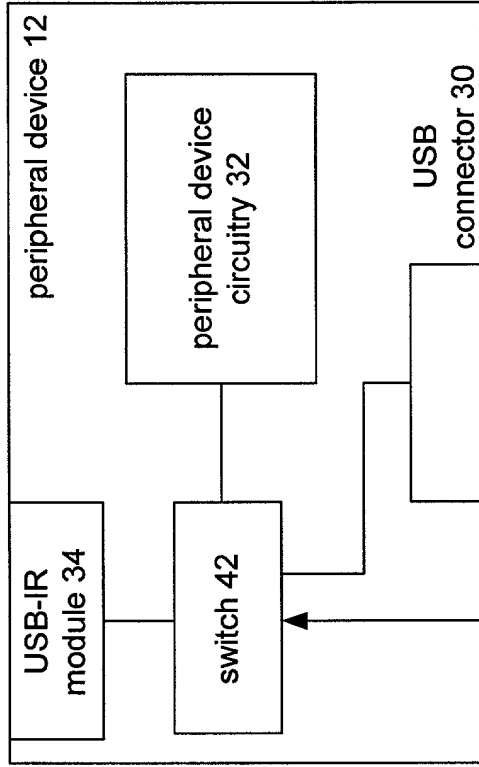


FIG. 2

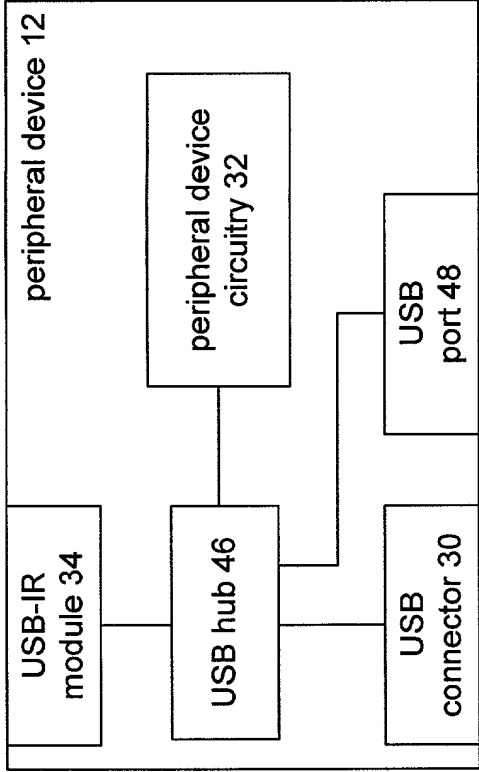


FIG. 3

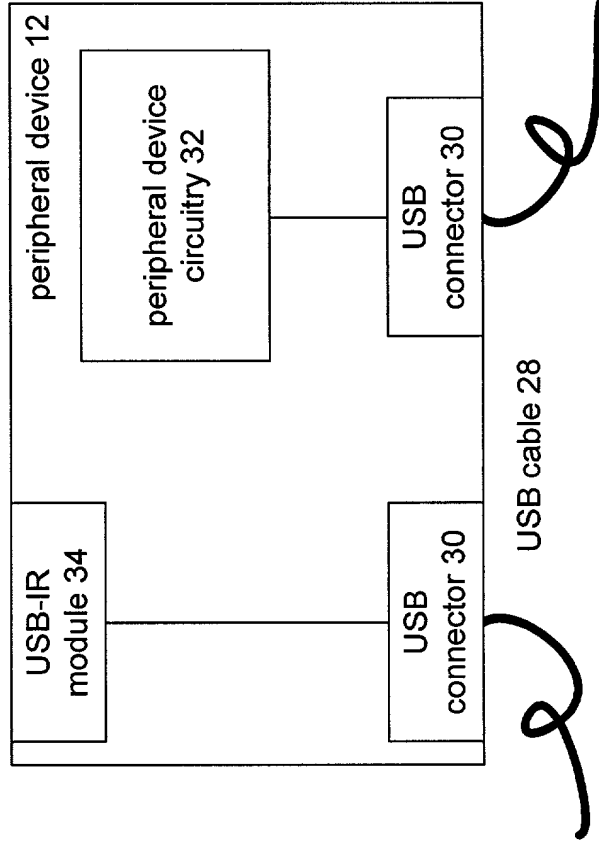


FIG. 4

DECLARATION AND POWER OF ATTORNEY
Pursuant to 37 C.F.R 1.63 and 1.67

As a below named inventor, I hereby declare that:
My residence, post office address and citizenship are as stated below next to my name; and
I believe that I an inventor of the subject matter of a patent application entitled:

COMPUTER PERIPHERAL DEVICE INCORPORATING INFRARED TRANSMISSIONS

The specification for the patent application (check one):

- ☒ is attached hereto.
- ☐ was filed on _____ as Application Serial No. _____
and was amended on _____ (if applicable).
- ☐ was filed as PCT International Application No. PCT/ _____ on _____
and was amended on _____ (if applicable).
- ☐ was filed on _____ as Application Serial No. _____
and was issued a Notice of Allowance on _____

I hereby state that I have reviewed and understood the contents of the above identified patent application, including the claims as amended by any amendment referred to above or as allowed as indicated above.

I acknowledge the duty to disclose all information known to me to be material to the patentability of this patent application as defined in 37 C.F.R. Section 1.56. If this is a continuation-in-part (CIP) application, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of 35 U.S.C. Section 112, I acknowledge the duty to disclose to the Office all information known to me to be material to patentability of the application as defined in 37 C.F.R. Section 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this CIP application.

I hereby claim foreign priority benefits under 35 U.S.C. Sections 119 and 365 of any foreign application(s) for patent(s) or inventor's certificate(s) listed below. I have also identified below any foreign application(s) for patent(s) or inventor's certificate(s) filed by me or my assignee which: disclose the subject matter claimed in this patent application; and have a filing date that is either: (1) before the filing date of the application on which my priority is claimed; or, (2) before the filing date of this application when no priority is claimed:

Prior Foreign Patents
(list number, country, filing date MDY, date laid open, date granted or patented)

--

I hereby claim the benefit under 35 U.S.C. Sections 120 and 365 of any United States application(s) listed below and PCT international application(s) listed below:

Prior U.S. or PCT Applications		
Application No.	Mo/Day/Yr Filed	Status
<input type="text"/>	<input type="text"/>	<input type="text"/>

I hereby appoint Timothy W. Markison, Registration No. 33,534 of SigmaTel Inc., 2700 Via Fortuna, Suite 500, Austin, Texas 78746 as my attorney, with full power of substitution and revocation, to prosecute this patent application and to transact all business in the United States Patent and Trademark Office connected therewith, and to file and prosecute any international patent applications filed thereon before any international authorities under the Patent Cooperation Treaty, and I hereby authorize him to act and rely on instructions from and communicate directly with the person/assignee/attorney/firm/organization who/which first sent this case to them and by whom/which I hereby declare that I have consented after full disclosure to be represented unless/until I instruct them in writing to the contrary.

Please address all correspondence and direct all telephone calls to:

SigmaTel, Inc.,
2700 Via Fortuna
Suite 500
Austin, Texas 78746
Phone: (512) 381-3732
Fax: (512) 381-4125

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of this patent application or any patent issued thereon.

Inventor(s)

DiSanza Leonard J 9304 Topridge Drive Austin Texas 78750	citizen of: US	Signature: <u>Leonard J. DiSanza</u> Date: <u>4/12/2000</u>
Nouzovsky Libor 4515 Edgemont Dr Austin Texas 78731	citizen of: US	Signature: <u>Libor Nouzovsky</u> Date: <u>4/13/2000</u>
	citizen of:	Signature: _____ Date: _____
	citizen of:	Signature: _____ Date: _____
	citizen of:	Signature: _____ Date: _____
	citizen of:	Signature: _____ Date: _____